

# JACOBS ENGINEERING GROUP INC.

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MCAS EL TORO  
SSIC # 5090.3

## TECHNICAL MEMORANDUM

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**DATE:** 15 February 1993

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**SUBJECT:** Sequence, Logic, and Approximate Timing for Completion of the Operable Unit (OU)-1 Remedial Investigation/Feasibility Study (RI/FS) Marine Corps Air Station (MCAS) El Toro

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### Purpose of the Memorandum

- o To present the current planning for completion of the OU-1 RI/FS to the Federal Facilities Agreement (FFA) management team.
- o To serve as a preliminary, conceptual Work Plan for completion of the OU-1 RI/FS.

### Background

The RI/FS Work Plan specifies that OUs-1, 2, and 3 be addressed in the Phase I RI, Phase I FS, and Phase I Technical Memorandum. The Navy now wants to accelerate completion of the OU-1 work if possible. Accordingly, planning for OU-1 is now proceeding on the assumption that a Phase II RI will not be required and that a Record of Decision (ROD) can be signed some time in mid-1994.

### Major Activities to Complete OU-1 RI/FS

The major activities needed to complete the OU-1 RI/FS include work elements of the RI, risk assessment, and FS. Groundwater modeling will be performed in support of the FS. See Figure 1 for a conceptual presentation of the logic, sequence, and approximate timing of these events.

### Remedial Investigation

- o Data Quality Objectives (DQOs) for OU-1

The Phase I RI addressed OU-1, as well as OUs-2 and 3, and the Phase I Technical Memorandum, due to the agencies May 7, 1993, will include OU-1 data. Based on these data, which will be available in late April, a DQO process will be performed for OU-1. One of the primary goals of the DQO for OU-1 will be to determine whether the present assumption (that a Phase II RI for OU-1 will not be required) is valid. If, through this process, the decision is made that a Phase II investigation is required, the sequence and timing of the events shown in Figure 1 will be revised to lead to a ROD for OU-1 in mid-1995.

- o Round 2 Groundwater Sampling

A second round of groundwater sampling for OU-1 will be performed in spring 1993 before a decision is made with regard to a Phase II RI. These data will be required whether or not a Phase II RI is needed.

- o OU-1 RI Report

If a Phase II RI is not required for OU-1, an RI Report will be prepared in late 1993 for submittal with the OU-1 FS to the agencies and subsequently to public comment. The OU-1 RI Report will use information from the Phase I RI Technical Memorandum, updated with the results of the second round of groundwater monitoring. The OU-1 Baseline Risk Assessment, described below, will be included as a chapter in this report.

### Risk Assessment

- o Preliminary Remedial Goals

Preliminary remedial goals (PRGs) will be developed for the Phase I RI Technical Memorandum for OUs-1, 2, and 3. PRGs are concentrations of contaminants that correspond to an acceptable incremental cancer risk or to a hazard quotient of 1 under a given exposure scenario.

- o Baseline Risk Assessment

A full baseline human health risk assessment for OU-1 will be performed on the basis of:

- The round of groundwater samples taken as part of the Phase I field work
- The second round of groundwater samples to be taken in spring 1993
- The Orange County Water District (OCWD) groundwater samples taken from the study area (1985 through 1992)
- The James M. Montgomery Engineers, Inc., groundwater samples taken from the study area (1988 through 1989)

- o Groundwater Modeling

Groundwater modeling will be performed to provide information to the FS in the form of alternatives for groundwater extraction.

- o Evaluate OCWD Model

The model used for the OCWD Desalter Project will be reviewed in light of information collected during the Phase I RI and evaluated for its usefulness in support of the OU-1 FS.

- o Navy, EPA, and State Agreement on Tools

Following the evaluation of the OCWD model, the Navy and the Comprehensive Long-Term Environmental Action Navy (CLEAN) Project Team will meet with the Environmental Protection Agency (EPA) and the State to agree on suitable modeling tools for the FS.

- o Incorporate Phase I Data, Recalibrate, Identify Additions/Modifications to Desalter

Using the agreed-upon model, the hydrogeologic property distributions will be updated based on the Phase I data and the model will be recalibrated. Conceptual remedial alternatives for groundwater extraction will be formulated and submitted to the Navy, EPA, and the State for concurrence. These alternatives are expected to include no action, the OCWD Desalter, and approximately three additional alternatives consisting of the Desalter and various configurations of additional extraction wells.

- o Simulate Alternatives and Perform Particle Tracking

The agreed-upon alternatives will be simulated to provide information in support of the detailed analysis of alternatives in the FS. A particle-tracking module will be used to assess the collective capture zone of the wells associated with each remedial alternative.

#### Feasibility Study

- o Define OU-1

The Navy, EPA, and the State will discuss and agree upon definitions for OUs -1, 2, and 3. These definitions will be periodically reevaluated as new data becomes available.

- o Define Remedial Action Objectives

The CLEAN Project Team will prepare a list of potential remedial action objectives for OU-1 for discussion at the March 1993 managers' meeting.

- o Establish Focused Approach

The CLEAN Project Team will prepare a position paper for discussion at the March 1993 managers' meeting, outlining a focused approach to the OU-1 FS.

- o Identify/Screen Technologies

Because the only contaminated medium expected to be addressed in OU-1 is groundwater, this step will focus on groundwater extraction and treatment technologies for removal of contaminants generated from MCAS El Toro.

- o Assemble Alternatives

Using the groundwater extraction alternatives formulated from the groundwater modeling tasks and representative treatment technologies identified and screened earlier, the CLEAN Project Team will assemble alternatives to be presented to the Navy, EPA, and the State for concurrence.

- o Detailed Analysis of Alternatives

The agreed-upon alternatives will be analyzed in detail following EPA RI/FS guidance and specified criteria. They will be developed to the extent required to generate order-of-magnitude cost estimates.

- o FS Report

An OU-1 FS Report will be prepared, reviewed, and revised according to the FFA.

- o Proposed Plan/Public Comment Period

The OU-1 RI and FS Reports will be submitted to public review with a proposed plan presenting the preferred remedy.

- o Responsiveness Summary

A formal document will be prepared in response to public comment and published with the ROD.

- o ROD

The ROD will be prepared, signed, and published.

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**FIGURE 1**  
**CONCEPTUAL FLOW DIAGRAM**  
**OU-1 RI/FS COMPLETION**  
**MCAS EL TORO**